

Because of the difficulty of weighing a bear in the woods, researchers caught and measured 54 bears, recording their weight, neck size, length, and sex. They hoped to find a way to estimate weight from the other, more easily determined quantities. List the population, sample, and the 5 W's(+1). For variables (the What of the study), list as either quantitative or categorical.

Population: All bears

Sample: 54 bears

Who: Bears

What: weight \rightarrow Q

neck size \rightarrow Q

sex \rightarrow C

length \rightarrow Q

When: N/A

Where: In the woods

Why: Find a way to
estimate bear's weight

How: Caught bears

In a study appearing in the journal Science, a research team reports that plants in southern England are flowering earlier in the spring. Records of the first flowering dates for 385 species over a period of 47 years show that flowering has advanced an average of 15 days per decade, an indication of climate warming, according to the authors. List the population, sample, and the 5 W's(+1). For variables (the What of the study), list as either quantitative or categorical.

Population: Plants in
Southern England

Sample: 385 species

Who: plants

What: flowering date → Q

When: 47 years

Where: Southern England

Why: climate warming

How: measure flowering
date

Are physically fit people less likely to die of cancer? An article in the May 2002 issue of Medicine and Science in Sports and Exercise reported results of a study that followed 25,892 men aged 30 to 87 for 10 years. The most physically fit men had a 55% lower risk of death from cancer than the least fit group. List the population, sample, and the 5 W's(+1). For variables (the What of the study), list as either quantitative or categorical.

Population: Men

Sample: 25,892 men

Who: men

What: physical fitness

Q or C, depending
on how the study
was conducted

When: 10 years

Where: N/A

Why: To see how fitness
affects death by
Cancer

How: Surveys to sample over
10 years

Some motion pictures are profitable and others are not. Understandably, the movie industry would like to know what makes a movie successful. Data from 120 first run movies released in 2005 suggest that longer movies actually make less profit. List the population, sample, and the 5 W's(+1). For variables (the What of the study), list as either quantitative or categorical.

Population: Movies released in
2005

Sample : 120 movies released
in 2005

Who : movies

What : profit \rightarrow Q

length of movie \rightarrow Q

When : 2005

Where : N / A

Why : Relationship between
running time and profit

How : Looked at running time
and profit data

Ian Walker, a psychologist at the University of Bath, wondered whether drivers treat bicycle riders differently when they were helmets. He rigged his bicycle with an ultrasonic sensor that could measure how close each car was that passed him. He then rode on alternating days with and without a helmet. Out of 2500 cars passing him, he found that when he wore his helmet, motorists passed 3.35 inches closer to him, on average, than when his head was bare. List the population, sample, and the 5 W's(+1). For variables, list as either quantitative or categorical and give appropriate units.

Population: Drivers

Sample: 2500 Drivers

Who: Drivers

What: distance \rightarrow Q, inches
helmet \rightarrow C

When: N/A

Where: Bath, England

Why: See treatment of
cyclists when wearing
or not wearing helmet

How: Measured distance